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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,128	06/30/2003	Ashoke Ravi	P-5782-US	2996

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EXAMINER

HANNON, CHRISTIAN A

ART UNIT PAPER NUMBER

2618

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/608,128	Applicant(s) RAVI ET AL.	
	Examiner Christian A. Hannon	Art Unit 2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12 and 15-19 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 7-8, 15-17 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Van Der Tang et al (US 2002/0063607), herein Tang.

Regarding claims 1, 7 & 15, Tang teaches a phase shift generator (Figure 1, Item "VI CONV1"; Tang) to provide a phase shift of substantially $\pi/2$ radians to an oscillation signal (Page 1, [0024]; Tang) between a first oscillation tank (Figure 1, Item OSC2; Tang), which provides substantially no phase shift and a second oscillation tank (Figure 1, Item OSC1; Page 1, [0025]; Tang). Corresponding claims 7 & 15 refer to an oscillator and a method that read analogous to claim and are therefore rejected on the same grounds as claim 1.

With regard to claim 2, 8 & 16, Tang teaches the apparatus of claim 1, wherein an additional phase shift generator (Figure 1, Item "VI CONV2"; Tang) to provide a phase shift of substantially $\pi/2$ radians to the oscillation signal (Page 1, [0024]; Tang) from the second oscillation tank (Figure 1, Item OSC1; Tang). Corresponding claims 8

& 16 refer to an oscillator and a method that read analogous to claim 2 and are therefore rejected on the same grounds as claim 2.

In regards to claim 3 & 17, Tang teaches the apparatus of claim 2, comprising a phase inverter to invert the phase of the oscillation signal (Figure 1, Item "-1"; Page 1, [0021]; Tang). Corresponding claim 17 refers to an analogous method to the apparatus in claim 3 and is similarly rejected on the same grounds.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 18 & 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang in view of Mandelcorn (US 5,739,711).

Regarding claims 4 & 18, Tang teaches the apparatus and device of claims 3 & 17, respectively, however Tang fails to teach that inverter is an amplifying inverter, although it is obvious to one of ordinary skill of the art, from the circuit schematic, that the inverter taught in Tang (Figure 1, Item "-1"; Tang) is an amplifying inverter, Tang admittedly never explicitly teaches the fact. Mandelcorn teaches an amplifier that is a phase inverter (Column 3, Lines 5-7; Mandelcorn). Therefore it would have been obvious to combine, into Tang, the teachings of Mandelcorn in order to provide a

stronger signal of the inverted phase oscillation. Furthermore, claim 18 reads analogous to claim 4 and is rejected similarly.

With regard to claim 19, Tang and Mandelcorn teach the method of claim 18, furthermore Tang teaches the method comprising converting said oscillation signal from voltage to current (Page 1, [0016]; Tang).

5. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tang in view of Javor et al (US 2004/0266356), herein Javor.

Regarding claim 9 Tang teaches, a quadrature oscillator comprising a phase shift generator (Figure 1, Item "VI CONV1"; Tang) to provide a phase shift of substantially $\pi/2$ radians to an oscillation signal (Page 1, [0024]; Tang) between a first oscillation tank (Figure 1, Item OSC2; Tang), which provides substantially no phase shift, and a second oscillation tank (Figure 1, Item OSC1; Page 1, [0025]; Tang). However Tang fails to teach circuitry for use in a transceiver comprising a dipole antenna. Javor teaches a transceiver comprising a dipole antenna (Page 1, [0009]; Page 2, [0019]; Javor). It would have been obvious to modify Tang in order to include a transceiver with a dipole antenna, such as that taught by Javor, in order to use said circuitry in a practical application.

With regard to claim 10, Tang & Javor teach the device of claim 9, furthermore Tang teaches wherein the quadrature oscillator comprises an additional phase shift generator (Figure 1, Item "VI CONV2"; Tang) to provide a phase shift of substantially $\pi/2$ radians to the oscillation signal (Page 1, [0024]; Tang) from the second oscillation tank (Figure 1, Item OSC1; Tang).

In regard to claim 11, Tang & Javor teach the device of claim 10, furthermore Tang teaches wherein the quadrature oscillator comprises a phase inverter to invert the phase of the oscillation signal (Figure 1, Item "-1"; Page 1, [0021]; Tang).

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tang in view of Javor and further in view of Mandelcorn.

Regarding claim 12, Tang and Javor teach the device of claim 11, as set forth above in the action, however Tang and Javor both fail to teach that the phase inverter comprises an amplifier. Mandelcorn teaches an amplifier that is a phase inverter (Column 3, Lines 5-7; Mandelcorn). Therefore it would have been obvious to combine, into the teachings of Tang and Javor, the teachings of Mandelcorn in order to provide a stronger signal of the inverted phase oscillation.

Allowable Subject Matter

7. Claims 5, 6, 13 & 14 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 5 & 13, Tang, Javor and Mandelcorn and all other cited pertinent art fail to teach the apparatus or wireless communication device, wherein the amplifier is able to provide a gain such that a total gain across a loop, which comprises the amplifier, the first and second oscillating tanks, the phase shift generator and the additional phase shift generator is equal to substantially one.


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Christian A. Hannon
March 7, 2006


QUOCHIEN B. VUONG
PRIMARY EXAMINER